

REMARKS

Applicants have amended Claims 1, 11 and 19 by incorporating the temperature limitation of Claim 20 thereinto and have canceled Claims 2, 10 and 12. Applicants have also amended Claim 20 by deleting the temperature limitation therefrom.

In the Office Action dated November 19, 2003, the Examiner stated that it is not clear from Kaminsky et al. '905 that one would only use a carbon monoxide-containing reducing gas in order to increase adsorbent capacity. However, the disclosure in Kaminsky. et al. '905 from column 16, line 54 to column 18, line 29, deals with the use of carbon monoxide-containing tail gas as the regeneration or reducing gas and contains the following statements:

"This example illustrates that use of tail gas to regenerate an acetylene saturated adsorbent bed is as effective as pure hydrogen." (column 16, lines 61-63)

"After about 4.5 hours acetylene was detected in the bed effluent which corresponds to 0.0977/ml acetylene adsorbed/ml of adsorbent, which surpasses the adsorption capacity observed when pure hydrogen was used for regeneration." (column 17, lines 29-33)

Thus, one of ordinary skill in the art would clearly not be deterred from using a carbon monoxide-containing reducing gas for regeneration by anything disclosed in Kaminsky et al. '905. In fact, one of ordinary skill in the art would be encouraged to use a carbon monoxide-containing reducing gas for regeneration of the adsorbent bed by the above disclosures in Kaminsky et al. '905.

Furthermore, the above quoted disclosures in Kaminsky et al. '905 were made in the context of adsorption of acetylene from a gas mixture that was passed through the adsorbent bed at 49°C. This is consistent with the results of Examples 1-9 in Applicants' specification, wherein acetylene was adsorbed from a gas mixture that was also passed through an adsorbent bed at 49°C. In Examples 1-4, pure hydrogen gas that contained no carbon monoxide was employed as the reducing gas, while in Examples 5-9 hydrogen gas that

contained 300 parts per million by volume of carbon monoxide was employed as the reducing gas. The adsorption capacities for these Examples are indicated below:

Example	Presence of Carbon Monoxide in the Reducing Gas	Adsorption Capacity (ml of acetylene per ml of adsorbent)
1	No	0.23
2-4	No	0.270
5	Yes	0.38
6-9	Yes	0.354

Thus, when acetylene is adsorbed on the adsorbent bed at 49°C, the presence of carbon monoxide in the reducing gas results in a substantial increase in the adsorption capacity of the adsorption bed.

By contrast, in Examples 10-17 in Applicants' specification, acetylene was adsorbed from a gas mixture that was passed through an adsorbent bed at negative 31°C. In Examples 10 and 11, pure hydrogen gas that contained no carbon monoxide was employed as the reducing gas, while in Examples 12-17, hydrogen gas that contained 282 parts per million by volume of carbon monoxide was employed as the reducing gas. The adsorption capacities for these Examples are indicated below.

Example	Presence of Carbon Monoxide in the Reducing Gas	Adsorption Capacity (ml of acetylene per ml of adsorbent)
10	No	0.26
11	No	0.255
12	Yes	0.127
13-17	Yes	0.128

Thus, when acetylene is adsorbed on the adsorbent bed at minus 31°C, the presence of carbon monoxide in the reducing gas results in a substantial decrease in the adsorption capacity of the adsorption bed.

There is no indication whatsoever in Kaminsky et al. '905 that the effect of the presence of carbon monoxide in the reducing gas on the adsorption capacity

of the adsorbent bed switched from a very substantial increase to a very substantial decrease depending upon the temperature at which acetylene is adsorbed on the adsorbent bed. When that temperature is in the range of 5°C to minus 35°C, the presence of carbon monoxide in the reducing gas results in a substantial decrease in the adsorption capacity of the bed; but when the temperature is above that temperature range, the presence of carbon monoxide in the reducing gas results in a substantial increase in the adsorption capacity of the adsorbent bed. That the presence of carbon monoxide in the reducing gas reduces the adsorbent bed's adsorption capacity for acetylene at temperatures in the range of 5°C to minus 35°C (a) not only is not disclosed in Kaminsky et al. '905; (b) but also is directly contrary to the teaching at column 17, lines 29-33 in Kaminsky et al. '905. Thus, Kaminsky et al. '905 effectively teaches away from Applicants' claimed invention.

In view of the above amendments and remarks, Applicants respectfully submit that their claims 1, 3-9, 11 and 13-20 are in condition for allowance, and request reconsideration and allowance thereof.

Respectfully submitted,

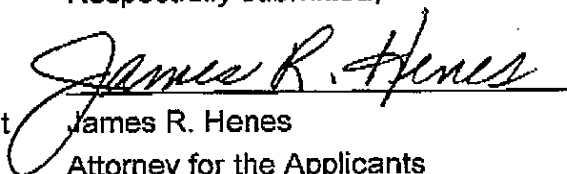
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